# "APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4

KOREMAN, I.M.; TUMANOV, A.A.; SORUKINA, V.H.

Composition and solubility of cerium oxinates. Izv.vys.ucheb.zav.; (MIRA 13:9) knim.i khim.tekh. 3 no.4:580 '60.

l. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete im. N.I.Lobachevskogo, kafedra analiticheskoy khimii.

(Cerium compounds) (Quinolinol)

### TUMANOV, A. A.

The Second All-Union Conference on the Preparation and Analysis of high-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

M. S. Chupakhin. The prospects for mass-spectroscopic analysis of high-purity solids by isotopic dilution and vacuum spark methods.

A. A. Tumanov. Biological determination of microquantities of Zn, Cu, Cd, Ag, and sulfides.

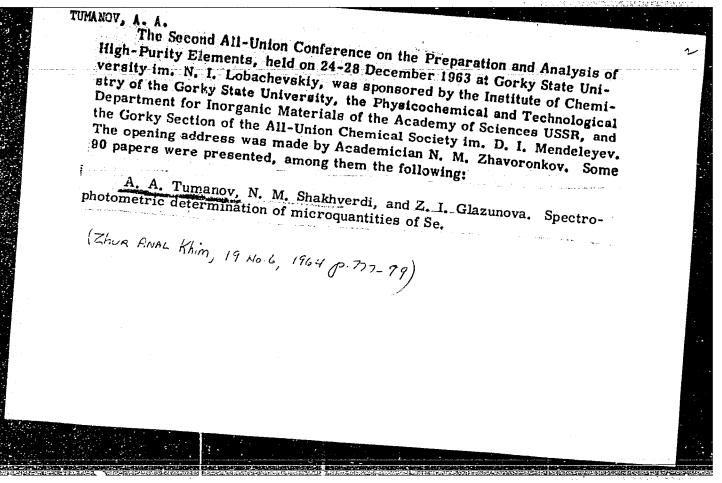
(Zhur. ANAL. Khim, 19 No.4, 1964 p.777-9)

TUMANOV, A. A.

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A. A. Tumanov, A. N. Sidorenko, and Ya. I. Korenman. Determination of iodine (up to 10-3 micrograms in 5 ml) in Si or Ge semiconductor thin films by means of a catalytic method.

(Zhur ANAL. Khim 19 No.6, 1964 (3.777-79)



TUMANOV, A. A.

The Second All-Union Conference on the Preparation and Analysis of high-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

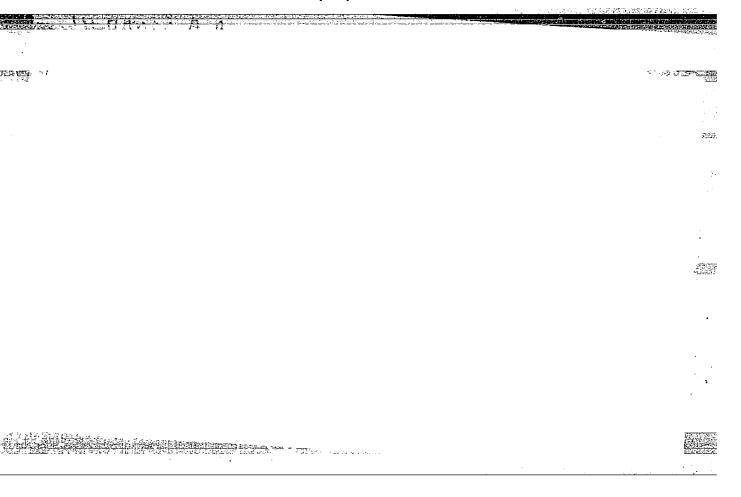
A. A. Popel' and Z. A. Saprykovo. Quantitative determination of paramagnetic ions in solution by NMR methods.

I. Ye. Zimakov. Determination of microimpurities (10<sup>-7</sup> to 10<sup>-8</sup>%) by repeated radioactive dilution.

A. A. Tumanov and V. S. Yefimychev. Determination of micro-concentrations with salicylan-2-aminophenol.

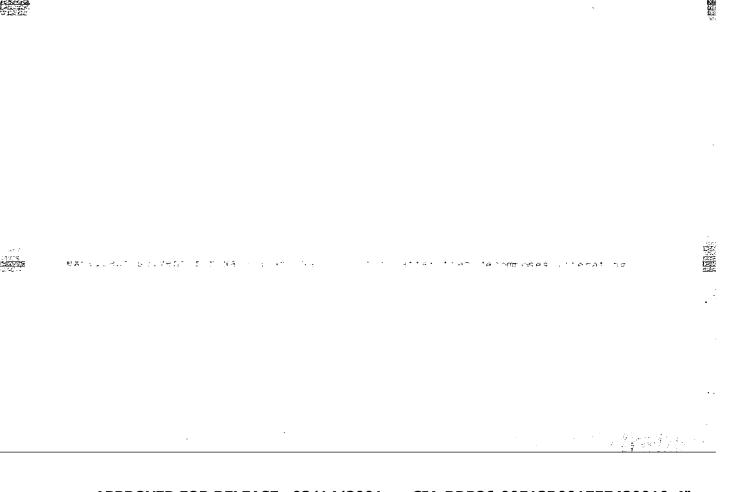
(Zhur ANAL Khim, 19 No.6, 1964, p.777-79)

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4



TOPIC TACS: spectronaryometry, trace analysis, impurity content, ultraviolet

 $\mathcal{I}_{\mathcal{E}_{1}}$ 



TUMANOV, A. A., and KOREMMAN, I. M.

"Coprecipitation of Cadmium With Antipyrine Tetrabromomercuriate," by I. M. Korenman and A. A. Tumanov, Scientific Research Institute of Chemistry at Gor'kiy State University, Zhurnal Analiticheskoy Khimii, Vol 11, No 4, Jul/Aug 56, pp 430-436

In the work described, it was established that cadmium is coprecipitated with mercuric ions when the latter react with antipyrine bromide, forming insoluble antipyrine tetrabromomercuriate. It was furthermore shown that precipitation of mercury in the form of antipyrine tetrabromomercuriate can be used for the separation of small quantities of cadmium present in zinc and copper salts.

Sum 1239

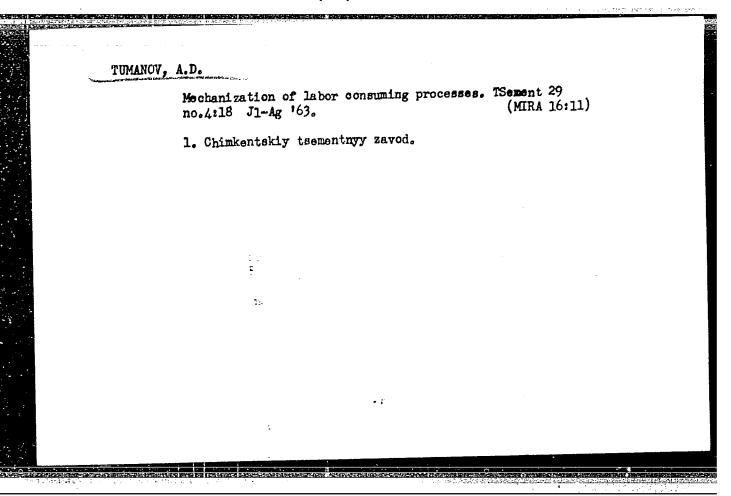
TUMANOV, A.A.; MALKINA, L.A.

Enzymatic catalytic reactions for analytical purpose.

Trudy po khim.i khim.tekh. no.1:118-123 '64.

(MIRA 18:12)

1. Submitted July 10, 1963.



### "APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4

TUMANOV, A.D.; STEPANOV, V.M.

Mastering new capacities. TSement 28 no.5:16-17 S-0 '62.

(MIRA 15:11)

1. Chimkentskiy tsementnyy zavod.

(Chimkent--Cement plants)

### "APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4

TUMANOV, A.D., inzh.

Cement exceeding the plan. TSement 31 no.5:19 S-0 '65.

(MIRA 18:10)

1. Chimkentskiy tsementnyy zavod.

TUMANOV, A.D., inzh.

Advantages of bearings made of wood-fiber plastics. TSement 30 no.5: 20 S-0 164. (MIRA 17:12)

1. Chinkentskiy tsementnyy zavod.

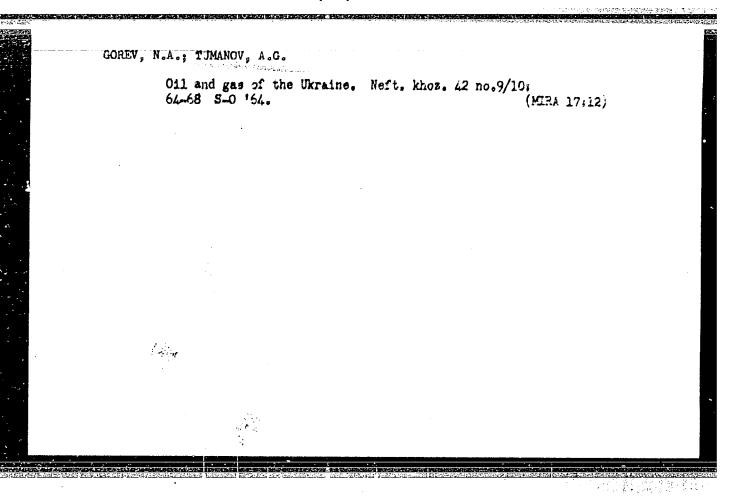
GAAB, M.T.; VARNAVSKIY, M.G.; TUMANOV, A.F.; SINYAKOV, V.N.; SONOMATOV, M.A.

Heasures for maintaining pressure in petroleum strata. [Suggested by Gaab, M.T.; Varnavskiy, M.G.; Tumanov, A.F.; Sinyakov, V.N.,

Sonomatov, N.A.] Prom.energ. 12 no.10:22 0 157. (MIRA 10:10)

(011 field flooding)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"



### "APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4

TUMNNY, c.l., inch.; GUSTOV, V.F., kand. tekhn. nauk

Heat exchange in the regenerators of sir separation units
(studied on an electric model). Trudy VNIIKIMASH no.10:
69-73 '65.

(MIRA 18:9)

CHERNYSHEVA, Ye.A., inzh.; TUMANOV, A.1.

Investigating the work of regenerators packed with random crushed stone. Trudy VNIIKIMASH no.9:36-55 165.

(MIRA 18:6)

### "APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4

TUMANOV, A.I., inzh.; GUSTOV, V.F., kand. tekhn. nauk

Electric model of a regenerator. Trudy VNIIKIMASH nc.9:
151-162 \*65. (MIRA 18:6)

KOSYAKOV, Pavel Nikolayevich, prof.; TUMANOV, A.K., red.

[Immunology of isoantigens and isoantibodies] Immunologita izoantigenov i izoantitel. Moskva, Meditsina, 1965.

311 p. (MIRA 18:6)

### "APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4

TUMANOV, A. I.; GUSTOV, V. F.

"Investigation of the heat exchange in the regenerators of an air-fractionating plant by means of the heat-electric analogy."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

All-Union Sci Res Inst of Oxygen Engineering.

| 1   |  |   | -                        |  |  |  |  |  |  |  |   | •   |   |   | •   |   |   |  |  | $\neg$   |   |                                       |
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| Oryllry_G. I., and I., G. Sottiers, Spectral Analysis at the United Band' Flant | Print, O. A. Application of Spectral Analysis at the Severally Metallurgical Flant 112 | Lobors, L. D. Spectral Nethods of Analyzing Froducts of the Magnesium and Titenium Industry | v. V. Sugrina, and A. K. | Mediors, A. V. Role of Internal Standard in the Spectral Analysis of | Leadysts of Ny and 75% percentage, and S. A. Konziss, Spectral 87  Lealinetty, Ta. H., A. S. Shayerich, F. V. Sugins, S. L. Chebarana, and H. A. Fergelides, Spectral relayers of Percentages, Spectral relayers of Percentages, and H. A. Fergelides, Spectral relayers of Percentages, and Percentages, and Percentages, and Percentages, and Percentages, and Percentages, Per | Shayerich, A. B. Spetral Analysis of Multicomposent Systems With a Migh and Wayling Content of Composents  You and Wayling Content of Composents  You are a second of the content of Composents of the content of Composents of the content of the con | Swentitekty, N. S. Spectral Analysis of Gases Contained in Metals 70 | Nament, N. F., S. L. Enharteldy, C. F. Kornigalko, F. F. Kornigator, and F. H. Lindtynes. Spectral Analysis of Steel Vita a Moderation | x Enterlar, 7a. M. Yr. I. Ustions, and D. M. Shayitha. Effect of Tungston on the Heralts of the Spectral Analysis of High-Speed 61 Cutting Steel | Mai'ters, N. O., and K. I. Tharzy. Application of Contact Electric Spark Transfer for Efficiently the Effect of Composition, Structure, and Mass of Samples During the Spectral Analysis of Certain Alloys Shareley, Th. N., <u>D. N. Formelin</u> , and Y. I. Uniform. Irrestigntion of the Effect of Structure on the Spectral Analysis Results of Structure is the Spectral Analysis Results. | Burstler, Tha.H. Trobles of the Entry of the Probe Material Into the RECURSING Chool During the Spetral Analysis of Steel | Sobalor. A. T., O. L. Electi, and T. P. Shirebornkij. Double here freetion of Universal Semi-conductof Unystals | *Zolovakids, G. Ye. Idrestipation of Preporation Electics of Oxidis-<br>ing Matallic Electrodes of an Arc | Alesborahy, Na. M. Some Distribution Characteristics of Particles As an A-C Arc | _Zolotable_0, Te. Investigation of the Interaction of the Components of an Alloy on the Degree of fedication of Atoms | on the special analysis of ferrous and nonferrous metals and alloys, alags, over, aggloments, refractories and other metrical and alloys, alags, over, aggloments, refractories and other materials used in the observed services acticles on the analysis of steals (including the determination of gases), ferroalloys, nonferrous metals and alloys, part noble switch, etc. The present volume is intended to discended the latest experience is northing with speciful laboratories, and to report on the results of scientific research. The author totals S. I. Outtime and T. M. Burwler, Almost all of the articles are accompanied by references. | REPOSE: This collection of articles is intended for account only no into record workers at formula and nonferrous established placts, and for ind ordering personnel of the meta-ording industry, ecological and prospects organisations, and similar scientific research intensions. | Mai: Arus Registratik Shayerish and Gapmally Pavletish Stormysler; Fach, Si. H. Matlerk, | Sponsoring Agency: Usul'skly filial Akademii namk SCER. Komissiya po spak-<br>troshophi and Usul'skly dom usharisi Vijijo, | Meterialy 2 Unal'shops sowethehadlys po spattroshopil, Swardlowsk, 1958 g. [Materials of the Second Unils Conference on Spectroscopy, Held in Sward-<br>lowsk, 1958) Swardlowsk, Metallurgitids, 1959. 705 p. Errata slip in-<br>serted, 1,000 copies printed. | • | NOS I BOUX KICKULOTATOR I BENEGO VOSC |

### TUMANOV, A.K.

Photoelectric spectral analysis of slags produced in the manufacture of ferrochrome and ferrotungsten. Zav.lab. 26 nc.12:1366-1368 160. (MIRA 13:12)

1. Chelyabinskiy zavod ferrosplavov. (Iron alloys--Spectra)

ZATSEPINA, E.M.; TUMANOV, A.K.

Exchange of experience. Zav.lab. 28 no.11:1333 '62.

(MIRA 15:11)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

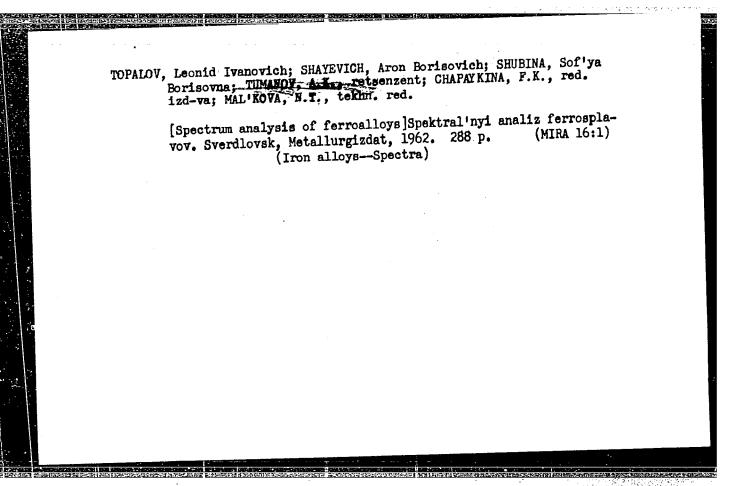
(Metals--Spectra)

TUMANOV, A.K.; CHABANENKO, N.I.

Device for analysis of alloys by the method of thermoelectromotive
force. Zav.lab. 29 no.5:627-628 '63. (MIRA 16:5)

1. Chelyabinskiy elektrometallurgicheskiy kombinat.
(Alloys-Analysis) (Electromotive force)

# TUMANOV, A.K. Plotting calibration curves during the reabsorption of lines. Zav. Plotting calibration curves during the reabsorption of lines. Zav. (MIRA 17:1) lab. 29 no.12:1445-1447 '63. 1. Chelyabinskiy elektrometallurgicheskiy kombinat.



VASIL'YEV, D.M.; TUMANOV, A.K.

Precision quartz dilatometer. Zav.lab. 25 no.3:374-375 '59. (MIRA 12:4)

1. Ieningradskiy politekhnicheskiy institut.
(Dilatometer)

S/032/60/026/010/013/035 B016/B054

AUTHOR:

Tumanov, A. K.

TITLE:

News in Brief

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 10, p. 1129

TEXT: The author reports on his electrical method of electrode polishing. The accurate shape of electrodes is of special importance to spectrum analyses by photoelectrical methods. The apparatus (Fig. p. 1729) consists of a rectifier, a porcelain or plastic vessel, an immobile lead electrode, and a holder for the electrodes to be polished. Any type of rectifier (12 - 24 v, 2 - 7 a) including the Cuprox rectifier BAK-13 28 (VAK-13) of the microphotometer MP-2 (MF-2) is suited for the purpose. The composition of the electrolyte and the working method are varied depending on the electrode material (see Table p. 1129). The stable electrodes are given the required shape on a turning lathe or by hand. The electrode is only electropolished after each exposure. It is inserted as an anode, its end being dipped into the electrolyte. When the traces

Card 1/2

News in Brief

S/032/60/026/010/013/035 B016/B054

of the spark have disappeared, the polishing is interrupted, and the electrode is rinsed with running water. The traces disappear within a few seconds, and the electrode surface becomes mirrorlike. 400 to 500 electrodes can be polished in 500 ml of electrolyte. The shape of the electrodes, ground as a conical frustum, does not change even after 150 - 300 analyses. Electrodes ground as hemispheres can be used for an unlimited period of time. Electropolishing speeds up the preparation of electrodes, reduces considerably the consumption of spectroscopically pure materials, and increases the stability of discharge as well as the reproducibility of analytical results. There are 1 figure and 1 table.

ASSOCIATION: Chelyabinskiy zavod ferrosplavov (Chelyabinsk Works of Ferroalloys)

Card 2/2

## TUMANOV, A.K.

Medical jurisprudence in the German Democratic Republic. Sud.-med. ekspert. 3 no.4:31-34 O-D \*60. (MIRA 13:11)

1. TSentral naya sudebnomeditsinskaya laboratoriya Glavnogo voyennomeditsinskogo upravleniya Ministerstva oborony SSSR (nach. - chlenkorrespondent AMN SSSR prof. M.I.Avdeyev).

(GERMANY, EAST-MEDICAL JURISPRUDENCE)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"

TUMANOV, Aleksey Konstantinovich; HEREZOVSKAYA, N.G., red.; LYAMINA, Ye.Ya., red.; TARASOVA, N.M., tekim. red.

[Forensic medical examination of material evidence] Sudebnomeditsinskoe issledovanie veshchestvennykh dokazatel'stv. Moskva, Gos.izd-vo iurid.lit-ry, 1961. 579 p. (MIRA 15:2) (MEDICAL JURISPRUDENCE)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"

8(2)

507/32-25-3-51/62

AUTHORS:

Vasil'yev. D. M., Tumanov, A.

TITLE:

A Precision Quartz Dilatometer (Pretsizionnyy kvartsevyy

dilatometr)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 374-375 (USSR)

ABSTRACT:

The article is a description of a dilatometer using the pattern of a "roller" with an expansion coefficient of appr. 5.104. The apparatus (Fig 1) consists of a base plate with

two supports for the two working rods which are connected through quartz extension pieces and which hold the sample. The samples with the quartz extension pieces are contained in two quartz tubes attached to a clamping device. A third quartz tube contains a thermoelement. During the experiment the three quartz tubes are in a stove with a maximum temperature of 1200°. The sample deformation is measured with the help of a mirror mounted on an axis. The latter is attached to a clamp (Fig 2). With a sample length of 10 mm a relative length change can be determined by means of the apparatus described with an accuracy of 2.10<sup>-6</sup>; the accuracy of determining an absolute extension is 2.10<sup>-5</sup> mm. There are 2 figures.

Card 1/2

A Precision Quartz Dilatometer

sov/32-25-3-51/62

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

Card 2/2

BRONNIKOVA, Mariya Aleksandrovna; GARKAVI, Anna Samoylovna; TUMANOV, A.K., red.; BEL'CHIKOVA, Yu.S., tekhn.red.

[Methodology and technique of forensic medicine expertise on material evidence] Metodika i tekhnika sudebnomeditsinskoi ekspertizy veshchestvennykh dokazatel'stv. Moskva, Medgiz, 1963. 277 p. (MIRA 17:2)



8/032/60/026/012/010/036 5 8020/3056

AUTHOR:

Tumanov, A. K.

TITID:

The Photoelectric Spectrum Analysis of Slage From the

Production of Ferrochromium and Ferrotungsten

PERIODICAL:

Zavodskaya laboratoriya, 1960, Vol. 26, Ro. 12,

pp. 1366-1368

TEXT: The author developed a procedure for the photoelectric spectroscopic determination of chromium oxide in ferrochromium slags and of tungsten trioxide in ferrotungsten slags. A one-channel device, which had been constructed in the author's factory on the basis of the optics of the CA-3 (SL-3) styloscope was used (Fig. 1). The analytical bands were recorded by means of a PBY-19M (FEB-19M) photomultiplier in conjunction with a single-cascade tube electrometer. The relictechnical part of the device (Fig. 2) consists of a single-cascade tube electrometer connected in bridge circuit with tube 191M (181P). The input resistance of the electrometer exceeds 10<sup>12</sup> ohms. The electrometer is fed by accumulators. The non-decomposed light incided upon a photocell of the type CLB-3

Card 1/2

The Photoclectric Spectrum Analysis of Slows 3/032/60/026/012/010/036 From the Production of Ferrochromium and B020/8056 Ferrotungsten

(SToV-3), and for the light of the analytical bands, a photoelectronic multiplier of the type FEU-19M was used. The device is stable and operates faultlessly. The instrumental error of the levice was less than 1%. As a light source, on a.c. are was used. The enclysis was carried out at 5.5 a by means of truncated cone electrodes unde from carbon, with a dilution of 30 mm Hg in the arc zone, an exposure of 30 seconds and with an entrance slit of 0.03 mm. For W the analytical bands 4008.75 A and for chromium the green triplet 5208.44, 5206.04, and 5204.52 A was used. When carrying out the analysis one determination is sufficient, because, during the exposure, a large quantity of samples is burned, which warrants good concentration of the band intensity and of the non-decomposed light. The composition of the analyzed slags is given (Table). The error of individual determination of chromium oxide in the ferrochromium class is + 3.2%, and that of the tungsten trioxide in the ferrotungaten slags is + 3.9%. The determination of one cell took 2 - 3 minutes. There are 2 figures, 1 table, and 2 Soviet references.

ASSOCIATION:

Chelyabinskiy zavod ferrosplavov

(Chelyabinsk Plant for Ferro Alloya)

Card 2/2

# Magnetic method of determining chromium in ferrochromium. Zav.lab. 27 no.8:998-999 '61. (MIRA 14:7) 1. Chelyabinskiy elektrometallurgicheskiy kombinat. (Chromium-Analysis) (Iron-chromium alloys--Magnetic properties)

SOV/137-58-11-23151

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 188 (USSR)

AUTHORS: Golubev, A. I., Tumanov, A. N., Filippova, A. P.

TITLE: Behavior of the Structural Components of Aluminum Alloys During

the Process of Chemical and Anodic Staining in Sulfuric Acid (Povedeniye strukturnykh sostavlyayushchikh alyuminiyevykh splavov v protsesse khimicheskogo oksidirovaniya i anodirovaniya

v serncy kislote)

PERIODICAL: V sb.: Korroziya i zashchita metallov. Moscow, Oborongiz,

1957, pp 328-341

ABSTRACT: The behavior of various structural components of cast Al alloys

during anodic (A) and chemical (C) staining was investigated. A was continued for 40 min in H<sub>2</sub>SO<sub>4</sub> of 200 g/liter concentration at 18°C and a cathode cd of 0.6-1 amp/dm<sup>2</sup>. It was found that alloys cast under pressure are anodized at a higher voltage than chill-cast alloys. C was conducted in a solution containing (in g/liter): CrO<sub>3</sub> 3 and Na<sub>2</sub>SiF<sub>6</sub> 3 at 18-20° during 10 min. Before the C and A

a part of the surface of the alloy was etched in a 0.5% HF solution.

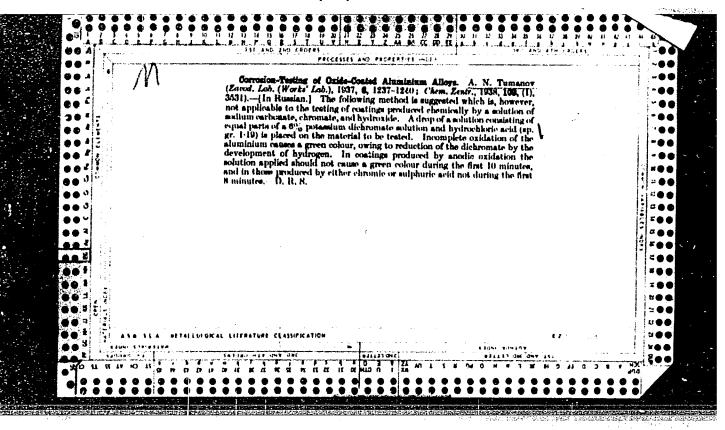
Card 1/2 Successive metallographic analysis of the specimens after etching,

SOV/137-58-11-23151

Behavior of the Structural Components of Aluminum Alloys (cont.)

C, and A made it possible to establish that in case of a greater Cu content (4.15%) the alloy consists of a solid solution and the chemical compound CuAl<sub>2</sub>. During A a film forms only on the surface of the solid solution. The chemical compound is etched away. Upon investigation of alloys containing an appreciable amount of Si it was established that the anodic film is then also formed on the surface of the solid solution only. The surface of Si crystals remains unchanged. Upon either chemical or electrochemical treatment of alloys no discernible oxide film could be discovered on the surface of the Si crystals. Addition of up to 10.46 Zn to Si alloys shows no appreciable effect on the behavior of the alloy during A and C. Alloys containing Mg have, along with the solid solution, an Mg<sub>2</sub>Si component which is completely dis solved during the A of the alloy.

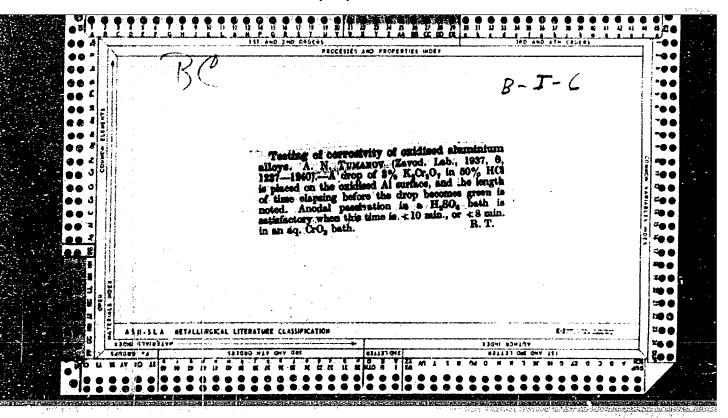
Card 2/2

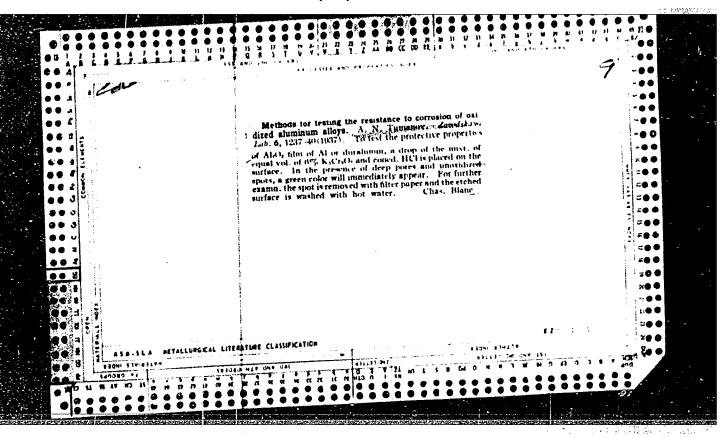


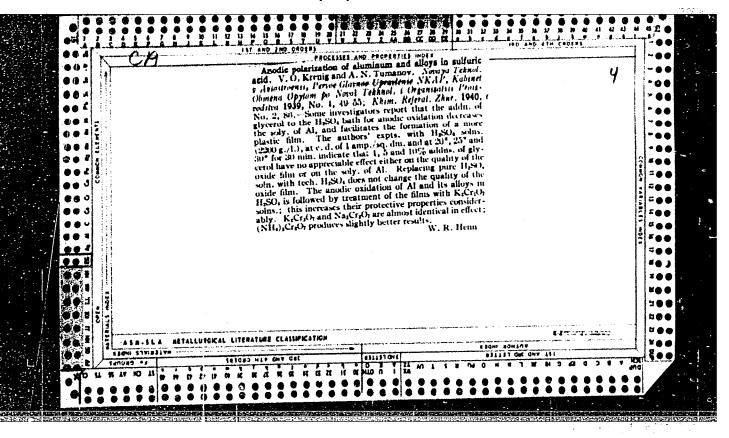
TUMANOV, A. N.; FILLPPOVA, A. P.; GOLUBEV, A. I.;

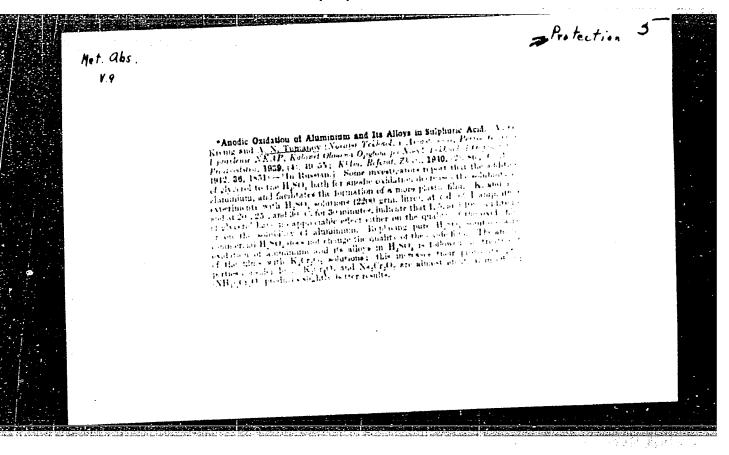
"Behavior of Structural Components of Aluminum Alloys in the Process of Chemical Oxidation and Anodizing in Sulphuric Acid," Korroziya i azshchita metallov (Corrosion and protection of Metals), Moscow, Oborongiz, 1957. 366 p.

PURPOSE: This book is intended for engineering, technical, and scientific personnel, at industrial plants, research institutes, and design offices working in the field of corrosion-protection of stainless steel, high-strength structural steel, and light alloys.









KOPYTOV, V.F., otv. red.; DAVYDOV, G.M., kand. ekon. nauk, red.;
KLIMENKO, V.Ya., kand.geol.-miner. nauk, red.; GOREV, N.A.,
inzh., red.; GORODETSKIY, V.I., inzh., red.; IYASOVSKIY,
N.F., inzh., red.; TUMANOV, A.P., inzh., red.; STUKALOV,
K.V., inzh., red.; TITOVA, N.M., red. izd-va; CHUMACHENKO,
V.S., red.izd-va; LIBERMAN, T.R., tekhn. red.

[Development of the Ukrainian gas industry]Razvitie gazovoi promyshlennosti Ukrainy. Kiev, Izd-vo Akad. nauk USSR, 1962. 274 p. (MIRA 15:11)

1. Akademiya nauk URSR, Kiev. Rada po vyvchenniu produktyvnykh syl URSR. 2. Chlen-korrespondent Akademii nauk Ukr. SSR i Institut ispol'zovaniya gaza Akademii nauk Ukr. SSR (for Kopytov). 3. Sovet po izucheniyu proizvoditel'nykh sil Ukr. SSR (for Davydov). 4. Institut geologicheskikh nauk Akademii nauk SSR (for Klimenko). 5. Ukrainskoye otdeleniye Gosudarstvennogo instituta po proyektirovaniyu zavodov iskusstvennogo zhidkogo topliva i gaza (for Gorodetskiy). 6. Gosudarstvennyy planovyy komitet Soveta Ministrov SSSR (for Gorev, Lyasovskiy).

(Ukraine-Gas, Natural)

TUMANOV, A.T., plav. red.; VYATKIN, A.Ye., red.; GARBAR, M.I., kand.

tekin. Rauk, red.; ZAYMOVSKIY, A.S., red.; KARGIN, V.A.,

red.; KISHKIN, S.T., red.; KISHKINA-RATNER, S.I., doktor

tekhn. nauk, red.; PANSHIN, B.I., kand. tekhn. nauk, red.;

ROGOVIN, Z.A., doktor khoz. nauk, red.; SAZHIN, N.P., red.;

SKIYAROV, N.M., doktor tekhn.nauk, red.; FRIDLYANDER, I.N.,

doktor tekhn. nauk, red.; SHUBNIKOV, A.V., red.; SHCHERBINA,

V.V., doktor geol.-miner. nauk, red.; SHRAYBER, D.S., kadn.

tekhn.nauk, red.; GENEL', S.V., kand. tekhn.nauk, red.;

NOVIKOV, A.S., doktor khoz. nauk, red.; KITAYGORODSKIY, I.I.,

doktor tekhn. nauk, red.; ZHEREBKOV, S.K., kand. tekhn. nauk,

red.; BOGATYREV, P.M., kand. tekhn. nauk, red.; BUROV, S.V.,

kand. tekhn. nauk, red.; POTAK, Ya.M., doktor tekhn. nauk,

red.; KUKIN, G.N., doktor tekhn. nauk, red.; KOVALEV, A.I.,

kand. tekhn. nauk, red.; ZENTSEL'SKAYA, Ch.A., tekhn. red.

[Building materials; an encyclopedia of modern technology]
Konstruktsionnye materialy; entsiklopediia sovremennoi tekhniki. Glav. red. Tumanov, A.A. Moskva, Sovetskaia entsiklopediia. Vol.1. Abliatsiia - Korroziia. 1963. 416 p.

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TUMANOV, A.T., glav. red.; VYATKIN, A.Ye., red.; GARBAR, M.I., red.; ZAYMOVSKIY, A.S., red.; KARGIN, V.A., red.; KISHKIN, S.T., red.; KISHKINA-KATHER, S.I., doktor tekhn. nauk, red.; PANSHIN, B.I., kund. tekhn. nauk, red.; ROGOVIN, Z.A., red.; SAZHIN, N.P., red.; SKLYAROV, N.M., doktor tekhn. nauk, red.; FRIDLY ANDER, I.N., doktor tekhn. nauk, red.; SHUHNIKOV, A.V., red.; SHCHERBINA, V.V., doktor geol.-miner. nauk, red.; SHRAYHER, D.S., kand. tekhn. nauk, red.; GENEL', S.V., kand. tekhm. nauk, red.; VINOGRADOV, G.V., doktor khoz. nauk, red.; NOVIKOV, A.S., doktor khoz. nauk, red.; KITAYGORODSKIY, I.I., doktor tekhn. nauk, red.; ZHEREBKOV,S.K., kand. tekhn. nauk, red.; BOGATYREV, P.M., kand. tekhn. nauk, red.; SANDOMIRSKIY, D.M., D.M., kert. tekhn. nauk, red.; BUROV, S.V., kand. tekhn. nauk, red.; FOTAK, Ya.M., doktor tekhn.nauk, red.; KUKIN, G.N., doktor tekhn. nauk, red.; KOVALEV, A.I., kand.tekhn. nauk, red.; YAMANOV, S.A., kand. tekhn. nauk, red.; SHEFTEL', I.A., kand. khoz. nauk. st. nauchn. red.; BABERTSYAN, A.S., inzh., nauchm. red.; BRAZHNIKOVA, Z.I., nauchm. red.; KALININA, Ye.M., mlad. red.; SOKOLOVA, V.G., red. bibliograf; ZENTSEL SKAYA, Ch.A., tekhn. red.

[Building materials; an encyclopedia of modern technology] Konstruktsionnye materialy; entsiklopediia sovremennoi tekhniki. Glav. red. A.T.Tumanov. Moskva, Sovetskaia entsiklopediia. Vol.1. Abliatsiia - korroziia. 1963. 416 p. (MIRA 17:3)

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TUMANOV, A.T., zusluzhennyy deyatel' nauki i tekhniki RSFSR;

DAVIDENKCV, V.V., akademik; SERENSEN, S.V., akademik;

KURDYUMCV, G.V., akademik; BCCHVAR, A.A., akademik;

KISHKIN, S.T.; ZAYMCVSKIY, A.S.; SHCHAPCV, N.P., prof.;

KUDRYAVTSEV, I.V., prof.; VITMAN, F.F., pref.; KISHKINA,

S.I., prof.

IAkov Borisovich Fridman; on the fiftieth anniversary of his birth. Zav.lab. 27 no.7:919-920 '61. (MIRA 14:7)

1. Akademiya nauk USSR (for Davidenkov. Serensen). 2. Chlenykorrespondenty Akademii nauk SSSR (for Kishkin, Zaymovskiy). (Fridman, IAkov Borisovich, 1911-)

ALITMAN, Marits Borisovich; LEBEDEV, Aleksandr Aleksandrovich;
CHUKHROV, Natvey Vasil'yevich; TUMANOV, A.T., zasl deyatel
nauki i tekhniki RSFSR, doktor tekhn. nauk, red.; KAMAYEVA,
O.M., red.izd-wa; VAYNSHTEYN, Ye.B., tekhn. red.

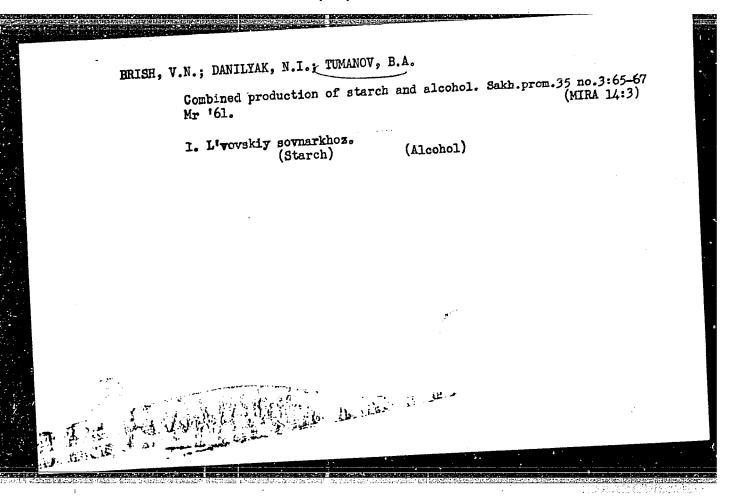
[Melting and founding nonferrous metal alloys; metallurgical
principles] Plavka i lit'e splavov tsvetnykh metalloy; metallurgicheskie osnovy. Pod red. A.T.Tumanova. Moskva, Metallurgizdat, 1963. 523 p.

(Nonferrous metals—Founding)

BRISH, V.N.; DANILYA K, N.I.; TUMANOV, B.A.

Combined porudction of starch and and alcohol. Spirt.prom. 26 no.8:
29-32 '60.

(Starch) (Alcohol)

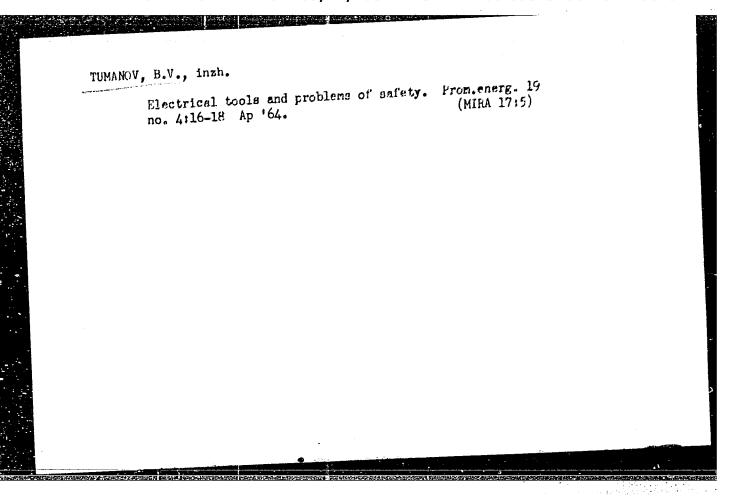


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TUMANOV, Boris Vladimirovich; DOLIN, P.A., red.; VCRONIN, K.P.,
tekhn.red.

[Safety information for electric welders] Pamiatka po tekhnike
bezopasnosti dlia elektrosvarshchikov. Moskva, Gos.emerg.izd-vo,
1960. 19 p. (MIRA 14:6)

(Electric welding—Safety measures)



SEVAST'YANOV, Mitrofan Ivenovich; VASIL'YEV, A.A., red.; DOLGOV, A.N., red.; TEZEKOV, V.V., red.; SMIRHOV, A.D., red.; USTINOV, P.I., red.; TUMANOV, B.V., red.; VORONIH, K.P., tekkn.red.

[Safety engineering in performing rigging operations in the installation of electric systems] Tekknika bezopeanosti pri installation of electric systems] Tekknika bezopeanosti pri proizvodstve takelazinykh rebot na montazhe energeticheskikh ustenovok. Moskva, Gos.energ.izd-vo, 1960. 55 p. (Biblioteka elektromontera, no.34)

[Klectric engineering—Safety measures]

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TUMANOV, E. A.

"Quantum electrodynamics in a configurational representation V Two-photon annihilation of positronium." (p. 385)

SO: ZHURNAL EKSPERIMENTALNOI I TEORETICHESKOI FIZIKI 1953 Vol. 25 No. 4 (10)

TUMANOU; G.

USSR / Cultivated Plants. Plants for Technical Use. Oil Plants. Sugar Plants.

M

Abs Jour

: Ref Zhur - Biol., No 8, 1958, No 34739

Authors

: Tumanov, G.; Antokhina, V. : Not given

Inst

Title

: Concerning the Incorrect Quality Rating of Variety 2421

Orig Pub

: Khlopkovodstvo, 1957, No 6, 38-40

Abstract : No abstract given.

Card 1/1

Tomurou, 6

USSR / Cultivated Plants. Technical. Oleaginous. Sugar-Bearing L-5

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22776

Author : Tumanov, G.

Inst : Not given

Title : Proper Distribution of Cotton Plant Varieties in Azer-

baydzhan.

Orig Pub : Khlopkovodstvo, 1955, No 5, 27-30

Abstract : Unreasonably large areas in Azerbaydzhan SSR are occu-

pied by the cotton plant variety 1298, and the development of variety 108-F is delayed. The data of the state variety tests, and comparisons of production within the limits of individual rayons and kolkhozes prove the superiority of variety 108-F over variety 1298 in the ma-

Card : 1/2

USSR / Cultivated Plants. Technical. Oleaginous. Sugar-Bearing.

L**-**5

Abs Jour

: Ref Zhur - Biol., No 6, March 1957, No 22776

Abstract

emajority of Azerbaydzhan cotton-producing rayons. The reference to the fact that on the whole variety 1298 yielded a larger crop than 108-F in the Republic in 1954 proves nothing since it is based on comparison of unlike data. It is also incorrect to delay production of variety 108-F for the reason that new varieties were developed by the scientific-experimental cotton institute of Azerbaydzhan (2018/2, 2421 and 2173). According to data of state variety tests, these varieties yield to variety 108-F in many Azerbaydzhan rayons. In the author's opinion, variety 108-F should be correctly dispersed through rayons, and a productive check-up on the new varieties should be widely practiced by comparison with varieties assigned to rayons.

Card

2/2

TUMANOV, G., gornyy inzh.; KHAZARYAN, L., gornyy inzh.

New equipment and technological processes in blasthole drilling at the lime quarries of the Ararat Coment and Slate Works. Prom.Arm. 6 no.7:33-38 Jl 163. (MIRA 16:9)

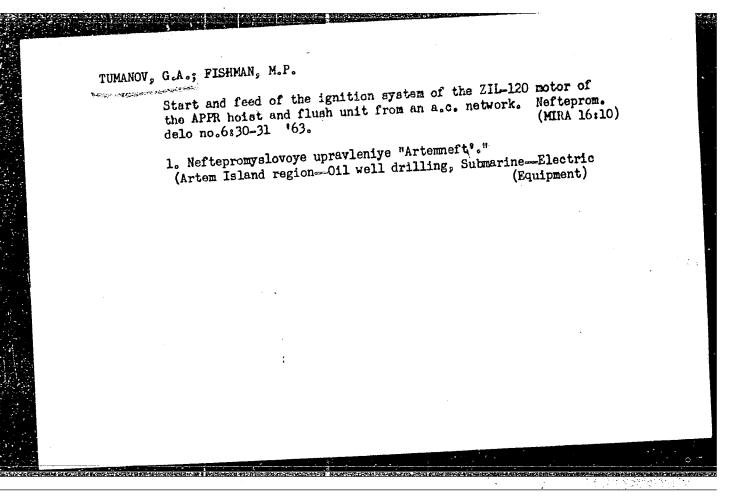
l. Armyanskoye spetsial'noye upravleniye po proizvodstvu burovzryvnykh rabot.

TUMANOV, G., inzh.; KHAZARYAN, L., inzh.

Using blasting techniques in recovering building tuffs. Prom. Arm. 6 no.1:50-53 Ja 163. (MIRA 16:4)

 Armspetsupravleniye po proizvodstvu burovzryvnykh rabot. (Armenia—Volcanic ash, tuff, etc.)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"



BARMIN, V.V.; BYSHEVA, G.K.; TUMANOY, G.K.; AGAPKIN, I.I.;
VESELOV, M.A.; ANDREYEV, V.M.; GOL'DIN, L.L.; LUZIN, V.M.;
RADKEVICH, I.A.; SOKOLOVSKIY, V.V.; STADNIKOV, A.G.

Study and correction of the horizontal component of the magnetic field in a proton synchrotron on low densities. Pribnetic field in a proton synchrotron on low densities. Pribnetic field, it takes eksp. 7 no.4:223-229 Jl-Ag '62. (MIRA 16:4)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR. (Magnetic measurements) (Synchrotron)

10761

S/120/62/000/004/042/047 E140/E420

AUTHORS:

Barmin, V.V., Bysheva, G.K., Tumanov, G.K., Agapkin, I.I., Andreyev, V.N., Veselov, M.A., Gol'din, L.L., Luzin, V.N., Radkevich, I.A., Sokolovskiy, V.V., Stadnikov, A.G.

TITLE:

Investigation and correction of the horizontal component of the low-induction magnetic field of the

proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 223-229

Permalloy probes modulated at 10 kcs were used to measure the position of the neutral plane of the magnetic field, found that the distortion of the neutral plane in the residual This distortion field was determined mainly by the neutral pole. decreased as the excitation of the C-blocks was increased. Due to hysteresis effects, the measurements had to be carried out under operating conditions. A description of the probe and its associated circuits is given. The measurements show that 67 of the magnets have a deviation of the neutral plane in the range + 0.5 mm, 16 magnets have 0.5 to 0.6 mm, 3 magnets 0.6 to 0.7 mm Card 1/2

S/120/62/000/004/042/047 E140/E420

Investigation and correction ...

and 12 magnets  $\geqslant$  0.7 mm. The average error of measurement is  $\pm$  0.17 mm. The method of correcting the neutral plane errors by means of windings on the neutral poles is described. There are 11 figures.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki

GKAE (Institute of Theoretical and Experimental

Physics GKAE)

SUBMITTED: April 11, 1962

Card 2/2

L: 14438-66 EWT(m)/T IJP(c)

ACC HR: AT6002500 SOURCE CODE: UR/3138/65/000/362/0001/0012

AUTHOR: Birger, H. G.; Borisov, V. S.; Bysheva, G. K.; Gol'din, L. L.; Korotkov,
H. H.; Martusov, Ye. T.; Sidorenko, Z. S.; Tumanov, G. K.

ORG: none

TITLE: Heasurement of proton momentum as a function of acceleration time on the synchrotron at the Institute of Theoretical and Experimental Physics

17, 5 5 SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut source ussay i eksperimental'noy fiziki. Doklady, no. 362, 1965. Izmereniye zavisimosti impul'sa protonov sinkhrotrona ITEF ot vremeni uskoreniya, 1-12

TOPIC TAGS: proton beam, synchrotron, particle physics

ABSTRACT: A beam of particles emitted at an angle of 0.222 rad to the direction of incident proton was analyzed by an SP-12 magnet located 13 m from a polyethylene target. Positively charged particles deflected by this magnet at an angle of 0.262 rad reached the detector. The detector count rate was measured as a function of magnet current. The energy of elastically scattered protons was used as a basis for determining momentum. The measurements were made at four different time intervals

Card 1/2

2

L 14438-66 ACC NR: AT6002500

from the beginning of the acceleration cycle. The following table gives the results of these measurements

Results of measurements of proton momentum P as a function of acceleration time

| in sec | $P(1^2\delta P/P)^d$ in bev/o |
|--------|-------------------------------|
| 0.404  | 2.20 (1 * 0.006)              |
| 0.408  | $2.25 (1 \pm 0.006)$          |
| 0.813  | 4.45 (1 * 0.006)              |
| 0.817  | 4.49 (1 * 0.006)              |
| 1.176  | 6.35 (1 * 0.006)              |
| 1.420  | 7.64 (1 * 0.009)              |

where  $\delta P$  is the relative error in momentum determination. The experimental errors

are analyzed and the following formula is given for proton momentum as a function of acceleration time: P = 0.08 + 5.34 t. Orig. art. has: 6 figures, 1 table, 1 formula.

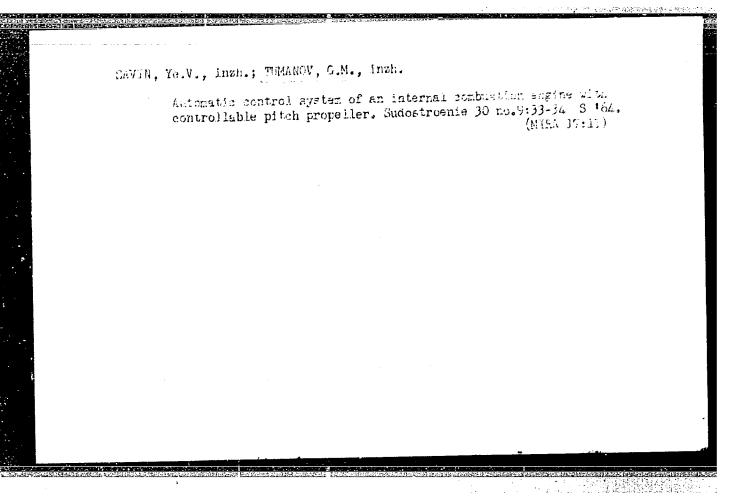
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Card 2/2



3/177/64/JID/WIL/WIL/WIL with the Bara Styan, is in, Martyre, . A., and Tomanov, ... The state of the second sections of the second sections with explosions 1381 000042: Akademiya nauk Armyanskoy SSR. Izvestiya. Seriya tekhnicheskikh nauk, vol XVI, no 1, 1963, 21-27 TEXT: A group of scientific workers and designers from the Institut geofiziki i inchenernoy seysmologii Akademii nauk Armyanskoy SSR (Institute of Geophysics and Engineering Seistwlogy, AS, Armenian SSR) and the Institut fiziki Zemli Akademii of the cultingential of the Alb-DR; seiscometer. The Alb-DR has a very the spherical pendicus in recording northwhile insulationers and 3 cornionial record ized pendulums for recording vertical displacements. The vertical pendulums had free oscillation periods of 0.8, 0.10, 0.15, 0.20, 0.30, 0.40, 0.60, 0.60, and 1.20 Took in the nor contail sendulums 0.18, 0.15, and 0.30 seconds. All pendulums were The low erg. The locarithmic demons and the second of the second a to take the third to be secular meterns and take were also obvained on the effect of secular waves in more, continuous structures and on seigmically safe distances from explosions. The explosions used as sources of seismic waves were 123-kg charges distributed in 4 holes 3.5 to 3.8 Card 1 of 2

5/173/63/016/001/001/001

Experience in using ....

meters deep. The safe distance was 15 m in the studied area consisting of a block basalt structure with interlayers of belozem. The results were given in a second table with explosions of 2.5 kg in 10 holes at a distance of 25 m, 1.3 kg in 4 holes at a distance of 25 m and 1.2 kg in a hole at a distance

estimated of the second than for a least of the second transfer than the second transfer of the second transfer of

THE HELLOWING WHO DELEMENT ADDRESS AND STATES OF A MAN STATESON.

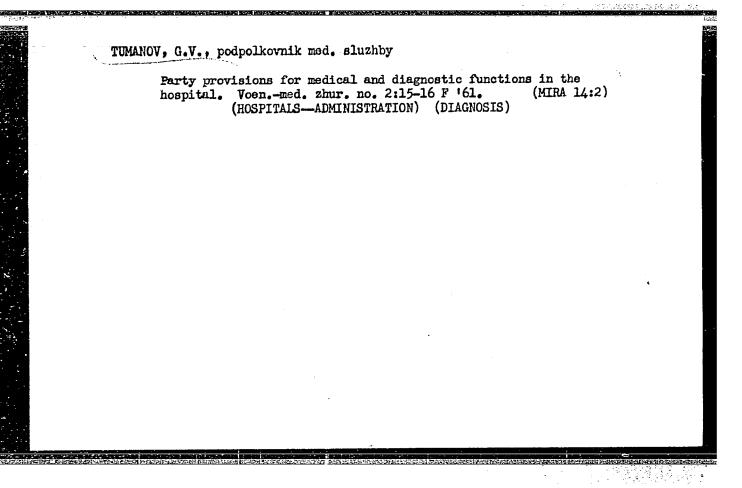
ANIMOTATION: last but geofizikd i inzhermoy seysmologii V., Ar SSR Institute of Responsion and Engineering Delamology, 48, Ar. R

Card 2 of 2

KARAPETYAN, B.K.; MAROYAN, G.A.; TUMANOV, G.S.

Use of AIS-2M seismometers in studying explosions. Izv. AN Arm. SSR. Ser. tekh. nauk 16 no.1:21-27 '63. (MIRA 16:6)

1. Institut geofiziki i inzhenernoy seysmologii AN Armyanskoy SSR. (Explosions) (Seismometry)



TUMATOV, G.V., podpolkovník meditsinskov sluzhby

Effectiveness of lytic cocktails in the treatment of traumatic shock: Effectiveness of lytic cocktails in the vice vice. sexperimental investigation. Voen.-med.zhur. no.8:69-71 Ag 159.

(MIRA 12:12)

(SHOCK ther.)
(HIBERNATION ARTIFICIAL)

TUMANOV, G.V., podpolkovnik meditsinskoy sluzhby; KATERINICH, N.T.,

podpolkovnik meditsinskoy sluzhby, kand.med.nauk; PAKANIDZE, I.G.,

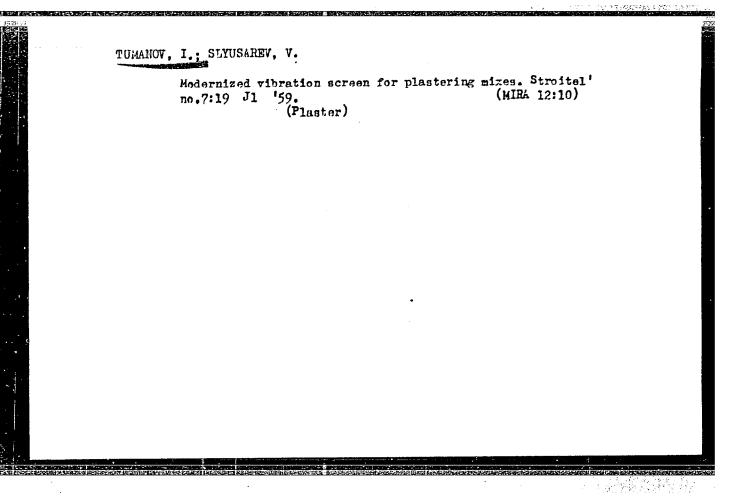
podpolkovnik meditsinskoy sluzhby; SOBOLEV, Ye.I., podpolkovnik

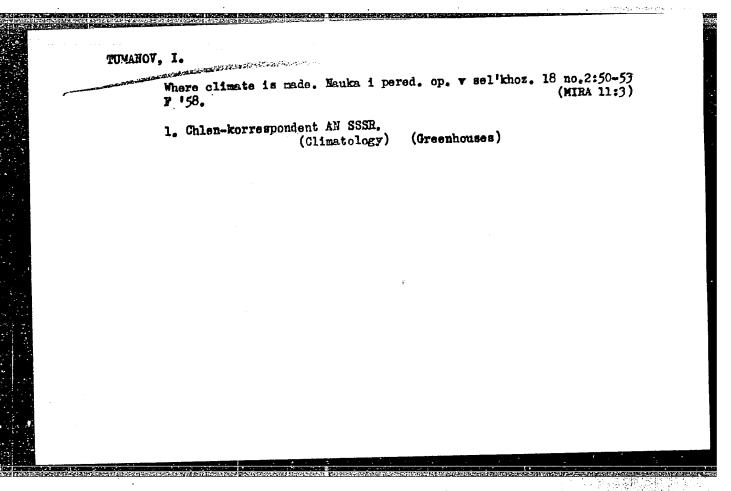
meditsinskoy sluzhby; LOMTEVA, ye.V.

Treatment of acute radiation sickness with homoplastic bone

Treatment of acute radiation sickness with homoplastic bone marrow. Vcen-med.zhur. no.9:21-22 S '61. (MIRA 15:10) (RADIATION SICKNESS) (MARROW-TRANSPLANTATION)

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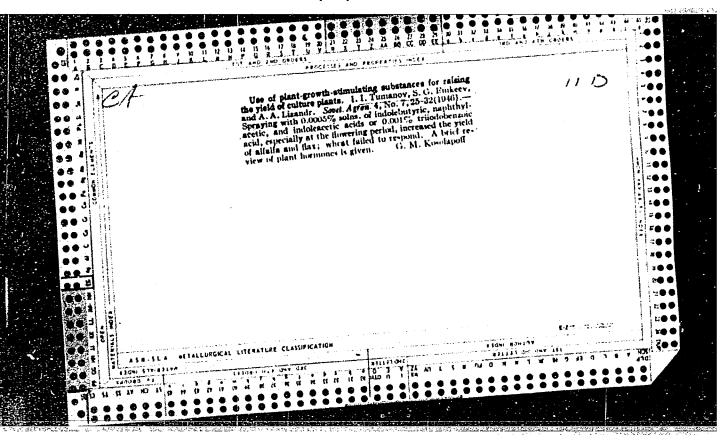


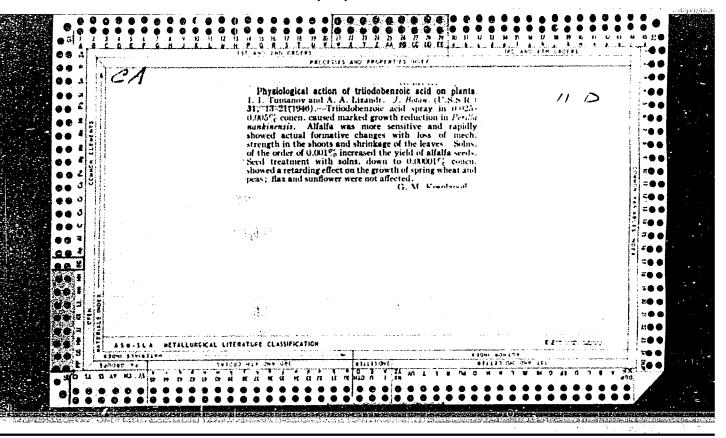
TUMANOV, I. F. --"Nature of the Colloids of Hydrolysis Products of Lumier
and Methods of their Elimination." \*(Dissertations for Degrees in Science and
Engineering Beforded at 1998 "Igher Miscational Engineering Beforded at 1998 "Igher Miscational Engineering Beforded at 1998 "Igher Miscational Engineering Beforded at 1998 "Igher Miscation USSR, Louingrad Order of Tenin Forestry Read Frank J. M. Miray. Louingrad,
1995
So: Knizhmaya Lotopis', No. 25, 1 Jun 55

\* For Degree of Doctor of Technical Sciences

CHEPELEVSKIY, Vladimir Natanovich; TUMANOV, Ivan Aleksevevich; SARKHOSH'YAN, Gurgen Nikitovich; RUMTANTSEV, Aleksey Nikolayevich; KLEVENSKIY, Aleksandr Iosifovich; BELOTSERKOVSKAYA, S.I., red.; SHUPLYAKOV,S.I., red.

[New developments in the technology and equipment used in motor-vehicle repair] Novoe v tekhnologii i oborudo-vanii dlia remonta avtomobilei. Moskva, Transport, 1964. 127 p. (MIRA 18:1)





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CIA-RDP86-00513R001757420010-4

TUMANOV, IVAN. I.

Geography & Geoglogy

Requirements of industry as to the quality of mineral raw materials. Handbook for geoglogists--Moskva, G os. Izd-vo geoglogicheskoi lit-ry Komiteta po delam geologii pri SNK SSSR, No 21, Diatomite, tripoli, mar, 1947.

Monthly List of Russian accessions, Library of Congress, October 1952, UNCLASSIFIED.

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TUMANOV, Ivan I. 1094-

The principal achievements of Soviet science in the study of frost resistance in plants. Moskva, Akademiia mauk SSSR, 1951. 53 p. (Akademiia nauk SSR. Timirazevskie chteniia, 11)

DA

1. Plants - Effect of temperature on. 2. Cold - Physiological effect.

TUMANOV, I. I., GAPEYEV, YE. Z.

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Influence of fruit-bearing organs in a maternal plant. Trudy Inst. Fiziol. rast., 7, No. 2, 1951.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

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- 1. TUMANOV, I. I.
- (600) USSR
- 4. Citrus Fruits
- Physiology of winterhardiness of citrus plants.  $I_{ZV}$ .AN SSSR Ser.biol. no.5,

1953, Unclassified. 9. Monthly List of Russian Accessions, Library of Congress, January

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Botany - Physiology

On L. I. Sergeev's article "Michurin doctrine should be incorporated into plant physiology." Sel i sem. 19 No. 2, 1952

Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified

GENKEL', P.A.; OKNINA, Ye.Z.; TUMANOV, I.I., otvetstvennyy redaktor; AVDUSINA, Ye.I., redaktor; POLYAKOVA, T.V., tekhnicheskiy redaktor.

[Determining frost resistance in plants according to depth of dormancy in tissues and cells; methodological instructions] Diagnostika morozoustoichivosti rastenii po glubine pokoia ikh tkanei i Fletok (Metodicheskie ukazaniia). Moskva, Izd-vo Akad. nauk SSSR, 1954. 34 p. (MIRA 8:2)

1. Chlen-korrespondent AN SSSR. (for Tumanov)
(Plants--Frost resistance)

TUMANOV, I.I

523

Zashchita tsitrusovykh. ot morozov. M., izd-vo Akad. nauk. SSSR. 1954. 95 s. s ill 19 sm. (Akad. nauk SSSR Nauch. - popul. seriya "V pomoshch! Sel! skomu khozyaystvu"). 4.000 ekz. lr. 60k. ----bibliogr: s. 92-93. -- 54-54412\_7 p 634.3: 632.111: 634.3+ 616.3

SO: Knizhnaya Letopis, Vol. 1, 1955

TUMANOV, I.I.; VINOKUR, R.L.

MINISTER TO PROPERTY.

Effect of soil temperature on the growth and wintering of lemon trees. Fiziol.rast. 1 no.1:21-36 S-0 '54. (MIRA 8:10)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akad.nauk SSSR, Moscow.

(Soil temperature) (Lemon)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"

TUMANOV, Ivan Ivanovich; SHIK,M.H., redaktor; ISLENT'YEVA,P.G., tekhnicheskiy redaktor

[Losses of plants due to cold weather and measures to prevent them] Prichiny gibeli rastenii v kholodnoe vremia goda i mery ee preduprezhdeniia. Moskva, Izd-vo "Znanie," 1955. 39 p.

(Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i

(MLRA 8:12)

1. Chlen-korrespondent AN SSSR (for Tumanov).
(Plants, Effect of temperature on)

nauchnykh znanii. Ser. 3. no.56)

#### TUMANOV, I. I.

Vegetative and winter hardy states in plants. Fiziol.rast. 2 no.3: 283-292 My-Je '55. (MLRA 8:11)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk SSSR, Moscow.

(Growth (Plants)) (Plants--Frost resistance)

TUMANOV, I.I.; KRASAVTSEV, O.A.

Frost resistance of woody plants. Fiziol.rast.2 no.4:320-333 Jl-Ag'55. (MIRA 8:12)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk SSSR, Moscow (Plants--Frost resistance)

TUMANOV, I.I.; SMIRNOV. H.S.

Emergency winter heating of a lemon plantation with flameless fuel and smoke of red phosphorus. frudy Inst. fixiol. rast. 9:288-323 '55. (NIRA 8:8)

l. Institut fiziologii rasteniy im. K.A.Timiryaseva Akademii nauk SSSR i Geofizicheskiy institut Akademii nauk SSSR.

(Frost) (Lemon)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"

| USSR/ Biolo | ogy - Botany   |
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| Card 1/1    | Pub. 1:5 = 3/39  |
| Authors     | * Tumanov, I. I., Mem. Corresp., Acad. Sc., USSR   |
| Title       | On the physiclogical bases of resistance to winter conditions on the part of plants  |
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KURSAHOV, A.L., akademik, otvetstvennyy redaktor; TUMANOV, I.I., otvetstvennyy redaktor; GENKEL', P.A., professor, otvetstvennyy redaktor; ERITIKOV, Ye.A., redaktor izdatel'stve; ZELENKOVA, Ye.V., tekhnicheskiy redaktor

[In memory of Academician N.A.Maksimov; a collection of articles]
Pamiati akademika N.A.Maksimova; abornik statei. Moskva, 1957.
323 p. (MIHA 10:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Tumanov)
(Botany--Physiology)

# TUMANOV, I.I.

Plants in winter; talk with I.I. Tumanov, corresponding member of the Academy of Sciences of the U.S.S.R. IUn. nat. no.2:24-25 F '57.

(MLRA 10:6)

1. Chlen-korrespondent Akademii nauk SSSR. (Plants--Frost resistance)

USSR/Plant Physiology - Heat Cycle.

I.

Abs Jour

: Ref Zhur - Biol., No 21, 1958, 95659

Author

: Tunnov, I.I., Trunova, Til.

Inst

Title

: Hardening of Tissues in Winter Plants by Means of Sugars

Absorbed from an External Solution.

Orig Pub

: Fiziol. rasteniy, 1957, 4, No 5, 397-408

Abstract

5 mm of a section of coleoptiles of grains, isolated from 3-day germinations, were threaded in glass needles, placed in noist chambers, and put into a refrigerator with the temperature somewhat over 0°, where they passed through the first phase of hardening. For the second phase, the needles with the coleoptiles were placed for 3 days on dry filter paper in a refrigeration cabinet with the temperature from -3 to -4°. Then the temperature was decreased as desired; in the following days part of the material was removed, the temperature decreased

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USSR/Plant Physiology - Heat Cycle.

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anew etc. After thawing for 4-5 hours at 00, the coleoptiles were placed in an incubator in a moist chamber on filter paper moistened with a 25 solution of saccharose and for 24 hours the growth of the surviving sections were determined. The first phase of hardening was more successful with the coleoptiles kept in saccharose (optimal concentration for Vyatka winter rye 12%), than in water. With the hardening of the coleoptiles in water, the contnet of sugars in them fell sharplh, while in the saccharose solution the content increased, especially rapidly in the first days. Ketoses, in addition, was accumulated 2-3 times more than aldose. One week was sufficient to grarantee high frost resistance, during which the size of osmotic pressure in the cells of the colcoptiles of Vyatka winter rye almost doubled. The first phase of hardening proceeded successfully in isotonic solutions of saccharose, raffinose and multose. The protective

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During hardening in the tissues, the content of frustose increased (more than 6-fold), as well as glucose (more than 2.5 times), saccharose (more than 3.5 times) and some fractions of oligosaccharides. Increase did not increase frost resistance. Paper chromatography showed that all of the sugars studied penetrate into the cells; lactose is not able to be transformed into the tissues in usuable forms of sugar. Hardening in a fructose solution did not grarantee a higher frost resistance in comparison to saccharose. — Yu. B. Lopatkin

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